

CLAIMS

1. A planar antenna assembly supported on a substrate, said antenna including a monopole element (102; 202), at least one grounded parasitic element (104, 106; 204, 206)
5 located proximate the monopole element (102; 202), wherein each grounded parasitic element (104, 106; 204, 206) is grounded to a planar ground plane and incorporates a conductive profile shaped so that the separation between the parasitic element and the monopole adjacent it, varies along the length of the parasitic element.
- 10 2. An assembly as claimed in claim 1 wherein the separation between the monopole and the parasitic element is provided by a stepped or angled edge on the or each grounded parasitic element, wherein the profile faces and extends away from monopole element (102; 202).
- 15 3. An assembly according to claim 1 or 2, including two grounded parasitic elements (104, 106; 204, 206) located on opposite sides of the monopole element (102; 202).
4. An assembly according to any of claims 1 to 3, wherein the or each grounded parasitic element (104, 106; 204, 206) includes a foot (112, 114; 208, 210) extending
20 towards a base part of the monopole element (102; 202) which is adjacent the ground plane.
5. An assembly according to claim 4, wherein the base part of the monopole element (102; 202) is of reduced width compared to the remainder thereof.
- 25 6. An assembly according to any preceding claim, wherein the or each grounded element includes a recess (107, 109; 212, 214) in an outer edge thereof.
7. An assembly according to claim 5, wherein each recess (107, 109; 212, 214) has an
30 upper wall proximate an end of the conductive profile.

8. An assembly according to claim 6 or 7, wherein each recess extends to a base of the grounded element.
9. An assembly according to any preceding claim, wherein each conductive profile includes two stepped or angled surfaces extending away from the monopole element (202), with an apex between the two stepped or angled surfaces pointing towards the monopole element.
10. An assembly according to claim 9, wherein a lower portion (203) of the monopole element is of meandering form.
11. An assembly according to claim 10, wherein the meandering form provides an apex located proximate the or an apex of the two stepped or angled surfaces of the or a grounded element.
12. An assembly according to any preceding claim, wherein the monopole element (102; 202) is tuned to operate in a frequency band of substantially 880 MHz to 2,300 MHz.
13. An assembly according to any preceding claim, wherein the monopole element (102; 202) is tuned to operate in the GSM to UMTS bands.
14. An assembly according to any preceding claim, wherein the assembly is substantially flat.
15. An assembly as claimed in any preceding claim including a stub (30; 116) located between the bottom end of the monopole and the ground plane.
16. An assembly according to any preceding claim, including switching means operable to switch between a plurality of sub-bands within the operating band of the monopole element (102; 202).

17. An assembly according to claim 16, wherein the switching means is operable to provide substantially continuous operation in the or a wireless networking band and selective operation in other wireless bands.
- 5 18. A computing or information device including an antenna assembly as claimed in any preceding claim.